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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,552	09/19/2001	Kouichi Taniguchi	09792909-4727	4498

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ROBERT J. DEPKE LEWIS T. STEADMAN
HOLLAND & KNIGHT LLC
131 SOUTH DEARBORN
30TH FLOOR
CHICAGO, IL 60603

EXAMINER

NGO, HUYEN LE

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,552

Applicant(s)

TANIGUCHI, KOUICHI

Examiner

Julie-Huyen L. Ngo

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RW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/21/2003 has been entered.

Response to Amendment

The following objection to the amendment is repeated as set forth below for Applicant attention since these issues have not been addressed in the previous response from Applicant.

The amendment filed on October 15, 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material that is not supported by the original disclosure is as follows:

In the last clause of claim 1, "forming another structure of the liquid crystal display."

In the last two lines of claim 6, "thereafter sealing a cavity with said pattern, and further where in said seal pattern has corrugated surface."

In claim 9, "other structures of the pixel elements."

In claim 10, the additional step of "using the step of forming the sealing film in the formation of at least one other structure of the display". Also, the term "sealing film" is inconsistent with the term "seal film" recited in claim 6.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 6, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are:

In claim 6, the step of forming "the cavity" in relating to other elements of the device, and the step of forming a corrugated surface on the seal pattern.

In the last two lines of claim 9, the step of forming other structures of the pixel elements.

Claims not specifically mentioned above are rejected as bearing the defect(s) of the claim(s) from which they depend.

Claims 6, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation in the last two lines of claim 6, "thereafter sealing a cavity with said pattern, and further wherein said seal pattern has corrugated surface." is unclear of how the cavity is seal with the seal pattern.

In claim 9, the language in the step of "forming on a drive substrate active devices for driving a driving liquid crystal display is unclear of whether an active device driving substrate or active devices are to be formed; also the step of "forming on an opposite substrate electrodes opposed to said active devices" is unclear of what to be formed, whether it is the opposite substrate or the electrodes. For examination purpose, The Examiner interprets the step is to form an active device driving substrate for carrying driver devices, and an opposite substrate opposing the active device driving substrate.

Also in claim 9, "*the formation of other structures of the pixel elements.*" lacks antecedence, and "a liquid crystal display" in line 3, shall be __ the liquid crystal display__ since it has been recited earlier in line 1.

In claim 10, t is unclear of what other structure of the display is formed in the step of forming "at least one other structure of the display".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

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subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (JP11174487A) in view of Buchwalter et al. (US6104466A).

With respect to claim 1, Ito et al. teach (Fig. 1 and 2) a liquid crystal display (LCD) comprising:

- a drive substrate 12 having active devices 15 mounted thereon for a driving liquid crystal;
- an opposite substrate 11 having electrodes provided thereon opposed to said active devices;
- a seal pattern 37 shown in Fig. 2 for joining both substrates with a substantially uniformly spaced gap there between;
- a liquid crystal filled in the gap,

Wherein

- said seal pattern 37 is created during a film-forming step, which is also used for forming another structure (seal pattern and spacer pattern) of the liquid crystal display.

With respect to claim 6, Ito et al. teach (Fig. 1 and 2) a method of forming a display device comprising the steps of:

- forming over at least a portion of a semiconductor substrate a seal film 31 for forming said seal pattern 37;
- covering said seal film with a mask 32;

- submitting said seal film to light exposure through said mask;
- developing the exposed seal film; and thereafter forming/sealing a cavity with the seal pattern.

With respect to claim 9, Ito et al. teach (Fig. 1 and 2) a method for fabricating a liquid crystal display, comprising the steps of:

- forming a drive substrate for carrying active devices for driving a driving liquid crystal display;
- forming an opposite substrate opposed to said drive device;
- forming a seal pattern on each of said drive substrate and said opposite substrate;
- joining both substrates with a gap there between; and
- filling liquid crystal into said gap, wherein said seal pattern is formed in a film forming step that is also used in the formation of other structures of pixel elements (spacer parts 34, 36).

However, Ito fails to disclose a method for fabricating a liquid crystal display with the seal pattern being formed on a periphery of each substrate with a corrugated surface for mutual engagement.

Buchwalter et al. teach (Figs. 6-12) a method for fabricating a liquid crystal display with the seal pattern 16, 20 being formed on a periphery of each substrate 12,14 with a corrugated surface for mutual engagement (abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the seal pattern in Ito et al's liquid crystal

display with the seal pattern being formed on a periphery of each substrate with a corrugated surface for mutual engagement (abstract).

Claims 2-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ito et al. (JP11174487A) in view of Buchwalter et al. (US6104466A).

as applied to claim 1 above, and as obvious as follow:

With respect to claims 2 and 3, it is well-known in the art for a liquid crystal display having a seal pattern that joins both substrates through being fused on a surface thereof by heating; or having a seal pattern that joins both substrates through being pressed together for adhering the seal pattern to substrates.

With respect to claim 4, although the drawings do not clearly indicate that said seal pattern 37 is provided over said drive substrate on a planarization film, which covers the active devices, one of ordinary skill in the art would have realized that said seal pattern is formed over said drive substrate on a planarization film in order for the substrates 11 and 12 to be sealed together.

With respect to claim 5, although the drawings do not clearly indicate that said seal pattern 37 is provided on said opposite substrate 11 (fig. 2g), and is formed on a transparent electrode film, one of ordinary skill in the art would have known that said seal pattern is formed over said opposite substrate and is formed on said transparent electrode film in order for the substrates 11 and 12 to be sealed together.

With respect to claim 7, each of said seal patterns is corrugated on the surface thereof so as to be engaged with each other to thereby allow both substrates to be joined.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the seal pattern in Ito et al liquid crystal display joins both substrates through being fused on a surface thereof by heating; or having said seal pattern joins both substrates through being pressed together for adhering the seal pattern to substrates.

Contact Information

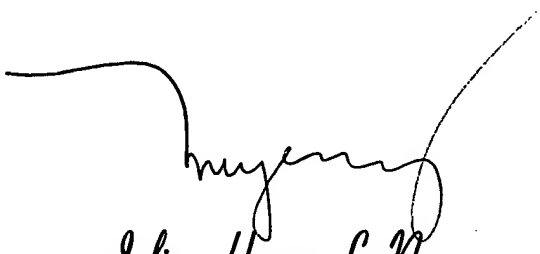
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on T-Friday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (571) 272-2293.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Any facsimile-transmitted correspondence to this application should be faxed to the facsimile number (571) 273-2295. Please call before fax any paper over.

January 30, 2004



Julie-Huyen L. Ngo
Patent Examiner
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